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10/599,151	09/21/2006	Masaki Yanagioka	Q97138	5036

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EXAMINER	
USELDING, JOHN E	

ART UNIT	PAPER NUMBER
1796	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/599,151	YANAGIOKA, MASAKI	
	Examiner	Art Unit	
	JOHN USELDING	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 February 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7,10 and 11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,10 and 11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7 and 10 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kikuchi et al. (5,484,836) as evidenced by Chiung-Huei et al. (WO 91/13944).

Regarding claim 1: applicant claims a rubber composition comprising 10-250 parts by weight of carbon black per 100 parts of a rubber component. Kikuchi et al. teach a composition comprising 20-75 parts by weight carbon black per 100 parts of diene based rubber (column 2, lines 5-8). The also teach an embodiments that use 50 parts by weight of carbon black per 100 parts rubber (Table 1). Applicant also claims the process by which the carbon black is made. This is a product by process limitation. Process limitations in product claims are not limited to the manipulations of the recited steps, only the structure implied by the steps. "In re Thorpe , 227 USPQ 964, 966 (Fed. Cir. 1985). Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been

established. *In re Best,* 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." *In re Spada,* 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the *prima facie* case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. *In re Best,* 562 F.2d at 1255, 195 USPQ at 433. See also *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985). The examiner notes that this process of producing carbon black using a production furnace having a combustion zone, reaction zone, and reaction stop zone coaxially connected together including a step of producing high temperature combustion gas through the combustion of hydrocarbon fuel in the combustion zone, a step of spraying a starting hydrocarbon in to the high temperature gas flow in the reaction zone to convert the starting hydrocarbon into carbon black through partial combustion or thermal decomposition reaction and a step of quenching the reaction in a reaction stop zone is well known in the art. As an evidentiary reference see Chiung-Huei et al (page 5, line 23 to page 6, line 27).

Applicant claims that the hydrogen desorption ratio is greater than 0.260-$6.25x10^{-4}$xCATB. Kikuchi et al. does not specifically teach this property for their carbon black. This is not a test that is usually used in the art to test the properties of carbon black. The examiner takes the position that CB-1 or CB-2 would inherently meet this limitation. All four (DBP, compressed DBP, CTAB, and TINT) of the physical property tests taught by Kikuchi et al. meet the applicant's limitations. The applicant alleges that

when the hydrogen desorption ratio does not meet this limitation that the wear resistance of the tire tread lowers and the heat build up becomes undesirable high (paragraph 0023). Kikuchi et al. are also concerned with wear resistance and heat build up of tire tread (column 1, lines 41-53). The values given in Tables 1 and 2 show that CB-1 and CB-2 provide both a low heat buildup and good wear resistance. If applicant's allegations are correct hydrogen desorption ratios of CB-1 and CB-2 must meet applicant's limitations otherwise the heat buildup and wear resistance values would have been bad. The examiner also notes that the applicant has not provided sufficient evidence to prove their assertion. There are no examples where all the other factors stay the same and only the hydrogen desorption ratio changes from meeting this limitation to not meeting this limitation. The applicant has failed to show that the hydrogen desorption ratio of the carbon black affects the physical structure of the rubber composition.

Applicant claims that the carbon black has a toluene tinting permeability of not less than 90%. Kikuchi et al. teach using CB-1 and CB-2 (Table 3), which inherently meets this limitation. The applicant alleges that when the toluene tinting permeability is less than 90% the wear resistance is undesirably deteriorated (paragraph 0024). Kikuchi et al. are also concerned with wear resistance of tire tread (column 1, lines 41-53). The values given in Tables 1 and 2 show that CB-1 and CB-2 provide good wear resistance. If applicant's allegations are correct the toluene tinting permeability of CB-1 and CB-2 must be at least 90% otherwise the wear resistance values would have been bad. The examiner also notes that the applicant has not provided sufficient evidence to

prove their assertion. There are no examples where all the other factors stay the same and only the toluene tinting permeability changes from below 90% to 90% or above. The applicant has failed to show that the toluene tinting permeability of the carbon black affects the physical structure of the rubber composition.

Regarding claims 2 and 3: applicant claims more product by process limitations for the production of the carbon black. See previous paragraph for how these limitations are treated. There are no structural limitations present in these claims.

Regarding claim 4: applicant claims that the carbon black has a DBP of 40-250 ml/100g, a compressed DBP of 35-220 ml/g, and a CTAB of 70-200 m^2/g. Kikuchi et al. teach using the particular carbon black CB-2, which has a compressed DBP of 111 ml/100g and a CTAB of 95 (Table 3). They do not list the value for the DBP but the DBP of carbon black CB-2 is inherently within the applicant's range. The DBP test is conducted by determining the amount of liquid that is needed to just fill all the spaces between the aggregates when the aggregates are pulled together by the surface tension forces of the dibutyl phthalate The crushed DBP test is conducted that same way as the DBP test except that the sample has be pre-compressed and then broken up four successive times. Therefor the crushed DBP value is always going to be lower than the DBP value. Therefore the DBP of CB-2 is greater than 111 ml/100g. The difference between the two tests is not great enough to cause the DBP value to go above 200.

Regarding claim 5: applicant claims that the carbon black has a DBP of 95-220 ml/100g and a compressed DBP of 90-200 ml/g. Kikuchi et al. teach using the

particular carbon black CB-2, which has a compressed DBP of 111 ml/100g and a CTAB of 95 (Table 3). They do not list the value for the DBP but the DBP of carbon black CB-2 is inherently within the applicant's range. The DBP test is conducted by determining the amount of liquid that is needed to just fill all the spaces between the aggregates when the aggregates are pulled together by the surface tension forces of the dibutyl phthalate The crushed DBP test is conducted that same way as the DBP test except that the sample has be pre-compressed and then broken up four successive times. The crushed DBP value is always going to be lower than the DBP value. Therefore the DBP of CB-2 is greater than 111 ml/100g. The difference between the two tests is not great enough to cause the DBP value to go above 200.

Regarding claim 6: applicant claims that the carbon black has a tinting strength >0.363xCTAB+71.792. Kikuchi et al. teach a tinting strength of 109 for CB-2 (Table 3). 109 is greater than 0.363x95+71.792, which equals 106.

Regarding claim 7: applicant claims that the carbon black has a tinting strength< 0.363xCTAB+71.792 and TINT>50. Kikuchi et al. teach using carbon black CB-1, which has a CTAB of 83 and crushed DBP of 111 (Table 3). CB-1 inherently meets the DBP limitation of claim 4 for the same reason as given above for CB-2. CB-1 has a tinting strength of 98 (Table 3). 98 is less than 0.363x83+71.792, which equals 102. 98 is also greater than 50.

Regarding claim 10: applicant claims that the extraction amount with monochlorobenzene is not more than 0.15%. Kikuchi et al. teach CB-1 and CB-2 which inherently meet this limitation. The applicant alleges that when the extraction amount

with monochlorobenzene exceeds 0.15% the wear resistance is undesirably deteriorated (paragraph 0024). Kikuchi et al. are also concerned with wear resistance of tire tread (column 1, lines 41-53). The values given in Tables 1 and 2 show that CB-1 and CB-2 provide good wear resistance. If applicant's allegations are correct the extraction amount with monochlorobenzene of CB-1 and CB-2 must not be more than 0.15% otherwise the wear resistance values would have been bad. The examiner also notes that the applicant has not provided sufficient evidence to prove their assertion. There are no examples where all the other factors stay the same and only the extraction amount with monochlorobenzene changes from at or below 0.15% to above 0.15%. The applicant has failed to show that the extraction amount with monochlorobenzene of the carbon black affects the physical structure of the rubber composition.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kikuchi et al. (5,484,836) in view of Amino et al (6,058,994).

Applicant claims that what is listed above and that their rubber composition is in the tread of a pneumatic tire. Kikuchi et al. teach using their rubber composition in low fuel consumption tire tread (column 1, lines 6-11).

While one would normally expect they are using their composition in pneumatic tires since pneumatic tires are used in vehicles that fuel consumption is a concern, they fail to specifically teach a pneumatic tire where the tread contains their composition.

Amino et al. teach a rubber composition that contains carbon black (column 6, line 64 to column 7, line 3) and is used as a tread in a pneumatic tire (column 1, lines 7-11).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the rubber composition of Kikuchi et al. in the tread of a pneumatic tire to make a pneumatic tire that provided low fuel consumption.

Response to Arguments

Applicant's arguments filed 2/5/2009 have been fully considered but they are not persuasive.

The applicant has argued that CB-1 and CB-2 do not necessarily meet the hydrogen desorption requirement. The applicant has argued that because N110 and N220 meet the DBP, compressed DBP, CTAB, and TINT and yet fail to meet the hydrogen desorption ratio therefore CB-1 and CB-2 do not necessarily meet the hydrogen desorption requirement. This is not found persuasive for the following reasons:

1) The applicant is allegedly using the hydrogen desorption ratios of Japanese Patent 2562338B (Muraki et al. JP 01-144434). It does not appear as though Muraki et al. is calculating a hydrogen desorption value as the applicant does in their invention (original specification 0048). For example, the value of Muraki et al. is based on 1g of carbon black at 1300ºC (abstract) whereas the applicant performs the following:

> Moreover, the hydrogen desorption ratio is represented as a mass percentage by measuring an amount of hydrogen gas produced when (1) a carbon black sample is dried in an isothermic drier of 105°C for 1 hour and cooled to room temperature in a desiccator and (2) about 10 g of the sample is weighed in a tin tubular vessel and pressed and sealed and then (3) the sample is heated at 2000°C in a stream of an argon form 15 minutes in a hydrogen analytical apparatus (EMGA621W, made by Horiba Seisakusho).

These seem like two very different analytical processes given all the extra steps completed by the applicant and the 700ºC difference between Muraki et al. and the applicant for heating the sample. It is unclear how the applicant took the hydrogen emission values of N110 and N220 from Table 1 of Muraki et al. divided the values by 10 and then considered them the same as their hydrogen desorption ratio. It does not appear as though the applicant has proven that N110 and N220 do not necessarily meet the claimed hydrogen desorption ratio.

2) The reason given in the office action is that the applicant alleges that when the hydrogen desorption ratio does not meet this limitation that the wear resistance of the tire tread lowers and the heat build up becomes undesirable high (paragraph 0023). It is the examples where CB-1 and CB-2 are used that there is a small heat build up and a remarkably improved wear resistance (table 2 and column 8, 19-20). That is not the case when N110 and N220 are used (column 8, lines 19-26). Therefore even if the

applicant has shown the N110 and N220 don't necessarily have the hydrogen desorption value, which is not admitted, this does not prove that CB-1 and CB-2 don't necessarily have the values because it is only CB-1 and CB-2 that have a small heat build up and a remarkably improved wear resistance.

3) The applicant has not shown how their method of making the carbon black provides any unexpected results over the method taught by Chiung-Huei et al. as was used in the above rejection.

The applicant has made the argument that the good wear resistance and heat buildup properties of Kikuchi are provided only by the ΔDst. This is not true. Kikuchi teaches that the wear resistance and heat build up properties are also provided by the physical properties of the carbon black used (column 3, lines 19-65).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN USELDING whose telephone number is (571)270-5463. The examiner can normally be reached on Monday-Thursday 6:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

John Uselding
Examiner
Art Unit 1796

/Marc S. Zimmer/

Primary Examiner, Art Unit 1796